New and Interesting Species of Oribatid Mites from Kakeroma Island, Southwest Japan

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Synopsis

AOKI, Jun-ichi (Institute of Environmental Science and Technology, Yokohama, Japan): New and interesting species of oribatid mites from Kakeroma Island, Southwest Japan. *Acta arachnol.*, **27**: (Special number): 85–93 (1977).

Two new species, *Sphaerochthonius suzukii* and *Plateremaeus yaginumai*, are described. *Microtritia tropica* MÄRKEL and *Oxyamerus spathulatus* AOKI are rocorded for the first time from Japan. They have been known only from South America and Thailand, respectively. The remaining 13 species collected were already known from the mainlands of Japan.

The oribatid fauna of Kakeroma Island has been quite unkown. From the neighboring islands in the Amami Islands AOKI (1965) recorded only two species, *Trichotocepheus amamiensis* from Amami-Oshima Island and *T. erabuensis* from Erabu Island. During his stay in the Amami Islands, Mr. Hiroshi SUZUKI (Institute of Tropical Medicine, Nagasaki University) had collected some soil mites and sent to me for identification. Among the specimens collected from humus deposited in a tree hole and soil material in the underground tunnel of a small mammal I found some interesting species, which are described and reported below.

I wish to express my hearty thanks to Mr. H. SUZUKI who gave me a chance to study such interesting species.

I. Description of New Species

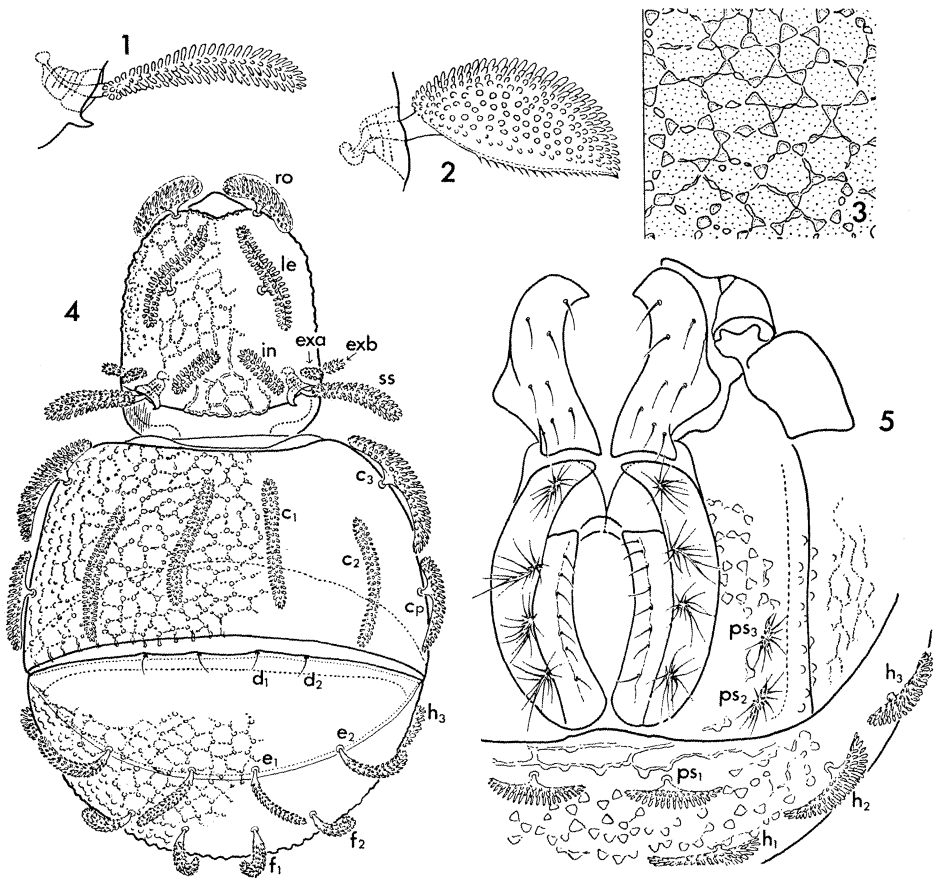
Sphaerochthonius suzukii sp. n.

(Figs. 1–5)

Measurement. Body size: $310 \times 180\ \mu$.

Prodorsum. All prodorsal setae "papillate type" (WALLWORK, 1960). Rostral

seta thickest among them, biramous or T-shaped. Lamellar seta the longest, also T-shaped, the anterior ramus being longer than the posterior one and directed anteromedially. Interlamellar seta uniramous, being inserted just inside bothridium and directed anteromedially. Exobothridial setae, *exa* and *exb*, uniramous, being situated close together. Sensillus also papillate like the other prodorsal setae, but more flat and provided on the ventral edge with a row of minute teeth (Fig. 2) as illustrated by WALLWORK (1960) in *S. transversus*; in dorsal aspect, however, it appears to be elongate (Fig. 4). Bothridium bears a conspicuous spur medially as in *transversus*. Surface of prodorsum covered by cerotegument consisting of irregular network of granules, which



Figs. 1–5. *Sphaerochthonius suzukii* sp. n. 1: Sensillus dorsal in view. 2: Sensillus in posterior view. 3: A part of cerotegument on notogastral surface. 4: Dorsal. 5: Genito-anal region and the posterior part of notogaster.

is most distinct behind interlamellar setae. The posterior part of prodorsum lacking in the cerotegument; the both sides behind bothridia showing a fine striation.

Notogaster. Three dorsal ridges are present; the middle ridge is a true "coupure", along which the dorsal side is concave. The anterior as well as the posterior ridges lying beneath cerotegument; the anterior one most weak and faint. Whole the surface except for the part on and behind the coupure covered by network-like cerotegument consisting of mostly triangular granules arranged to form hexagons or pentagons (Fig. 3). In total 16 pairs of notogastral setae are present, though 2 pairs among them situated on ventral(?) plate and the notation of the setae made in Figs. 4 and 5 may rather be provisional. According to this notation, setae c_1, c_2, c_3 and c_p situated on the anterior field (anterior to the dorsal coupure), d_1 and d_2 on the coupure, e_1, e_2, f_1, f_2, h_1, h_2, h_3 and ps_1 on the posterior field, and ps_2 and ps_3 on the ventral(?) plate. The setae c_1, c_2, c_3, c , h_1, h_2, h_3 and ps_1 are T-shaped (biramous); setae of c-series directed anteriorly and posteriorly, their anterior rami being distinctly shorter than the posterior ones. Setae of d-series on the dorsal coupure quite different in shape from the remaining setae, short, fine and simple. Among the setae on the posterior field, e- and f- series uniramous. Setae ps_2 and ps_3 not papillate type, but composed of many branches which are long and pointed at tip.

Genito-anal region. Genital and aggenital plates fused, and suture between them incomplete; the posterolateral corner of genital plate distinctly angulate; 8 fine and simple setae on each genital plate. Anal plate separated from adanal plate by a suture, bearing 7 or 8 fine setae. Adanal plate provided with 4 adanal setae, which have many, long branches like setae ps_2 and ps_3.

Material examined. Holotype (YNU-3, in spirit): and 1 paratopotype: Mt. Yumishi-dake, Kakeroma Island in the Amami Islands, Southwest Japan, 25–II–1972, H. SUZUKI. The type series is deposited in the collection of Yokohama National University.

Remarks. In the genus *Sphaerochthonius* the following 5 species have hitherto been described: *Sphaerochthonius splendidus* (BERLESE, 1904), *S. gemma* (OUDEMANS, 1917), *S. elegans* BERLESE, 1910, *S. transversus* WALLWORK, 1960, and *S. phyllophorus* BALOGH et MAHUNKA, 1969. Among them, *S. elegans* was placed by HAMMEN (1959) in the synonymy of *S. gemma*; both the species were described after juvenile specimens. In 1960, WALLWORK published a description of *Sphaerochthonius* sp. from Ghana, to which he did not give the name, because he supporsed that his Ghanean species was possively be conspecific of *S. gemma*. Excepting *S. gemma*(=*S. elegans*), the adult form of which is unknown, any of the species mentioned above is distinguishable from the present new species, *S. suzukii*, by the forms of body setae as summarized in Table 1.

Table 1. Comparison of types of body setae among the species of *Sphaerochthonius*.

	S. suzukii sp. n.	*S. transversus* WALL., 1960	*S.* sp. WALL., 1960	*S. splendidus* (BERL., 1904)	*S. phyllophorus* BAL. & MAH., 1969
ro	T	T	T	T	T
le	T	T	T	T	T
in	U	U	U	T	T
exa	U	U	U	U	
exp	U	U	U	U ?	
c_1	T	T	T	T	
c_2	T	T	T	T	T*
c_3	T	T	T	T	
c_p	T	T	T	T ?	
d_1	S	T	T	T	
d_2	S	T	T	T	
e_1	U	T	T	T	
e_2	U	T	T	T	
f_1	U	T	T	T ?	
f_2	U	T	T	T ?	P*
h_1	T	T	T	T ?	
h_2	T	T	T	T ?	
h_3	T	T	T	T	
ps_1	T	T	T	T ?	
ps_2	B	T	T	T ?	T**
ps_3	B	T	T	T ?	T**
ad	B	T	T	?	P**
an	S	S	S	?	?
g	S	S	S	?	?

T: T-shaped (biramous), papillate

U: uniramous, papillate

P: phylliform

B: branching

S: simple

* Precise descrimination in shape of notogastral setae was impossible, because the original description was not accompanied by figure of total body. But it is certain from the following statement that there are two types of notogastral setae: "Anterior hairs irregularly T-shaped, ... posterior hairs phylliform.

** As to the recognition of adanal setae, WALLWORK (1960) and I have a different opinion from that of BALOGH & MAHUNKA (1969). I consider their "adnal hairs" as setae of *ps*-series and their "anal hairs" as true adanal setae.

A specieal attention should be paid in *S. suzukii* on the short and simple setae of *d*-series, which take in the other species the same papillate form as the remaining notogastral setae; adanal setae and setae ps_2 and ps_3 are also peculiar in shape, having many long branches pointed at tip and not taking papillate form like those of the other congeners; the setae of *e*- and *f*-series never T-shaped as in the other species. In addition to the difference in the shape of body setae, some other features should be compared among the species concerned. The cerotegument of *S. suzukii* is not composed of such a firm network as that illustrated in *S. transversus* and perhaps in the other known species, but composed of rather triangular granules arranged in a network-like pattern. Genito-anal chaetotaxy of *S. suzukii* is 8–0–7–4 or 8–0–8–4 and different from 8–0–10–5 in *S. transversus* and 8–0–6–4 in *Sphaerochthonius* sp. of WALLWORK.

The new species was named after Mr. Hiroshi SUZUKI of Nagasaki University, who placed precious materials at my disposal for study.

***Plateremaeus yaginumai* sp. n.**

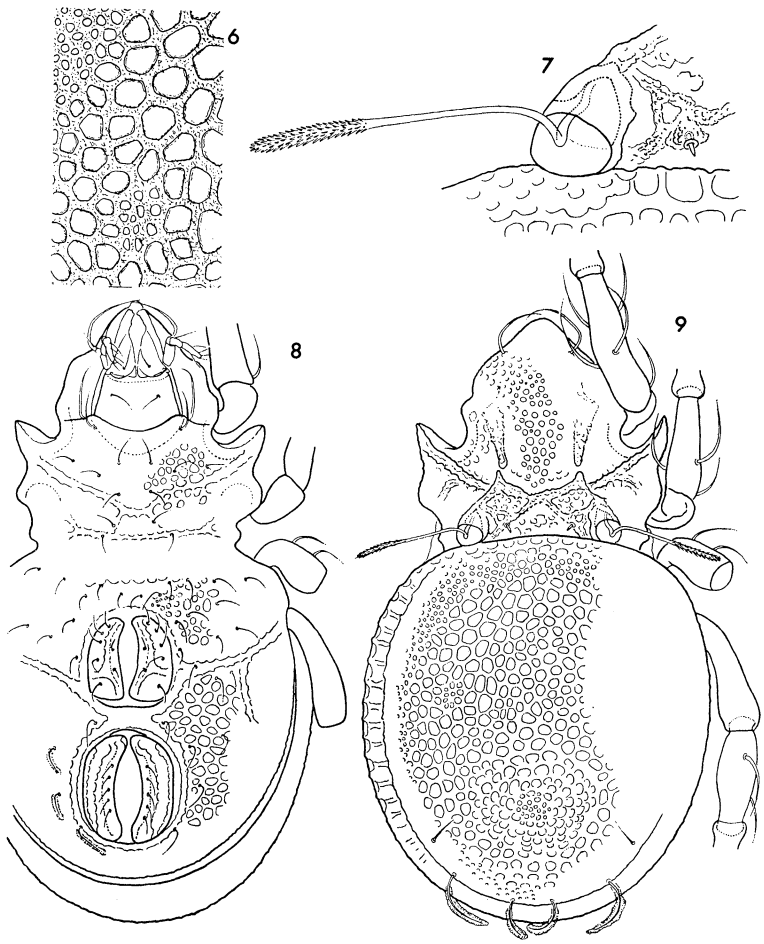
(Figs. 6–9)

Measurement. Body length: $710 \times 397\ \mu$.

Prodorsum. A complicated structure of elevated ridges found on the posterior part of prodorsum. In front of the structure found an arch of transverse concavity. Rostral and lamellar setae long, incurved, smooth and covered with cerotegument. Interlamellar seta extremely short and blunt at tip. Sensillus strongly twisted near the base, turing upward, then directed to the lateral direction; the distal portion hardly incrassate, densely bearing barbs not sharply pointed at tip (Fig. 7).

Notogaster. Three concavities are found on notogaster: a single large and deep one on the posterior part and one on each side of the middle portion. Notogastral surface reticulate with large areoles of rounded polygons, which become, however, suddenly small on the marginal area and at the bottom of the three concavities mentioned above. Three pairs of thin setae located on the posterior part, among which only the anterior pair directed anteromedially.

Ventral side. Genital plate with 7 genital setae, among which two are short and inserted along the median margin and five are long and inserted near the lateral margin of the plate. Between the rows of these setae found a longitudinal ridge with a latero-posterior branch. Anal plate has also a longitudinal ridge and 5 setae arranged longitudinally inside the ridge. Anal opening surrounded by 4 pairs of setae, of which 1 pair supposed to be aggenital setae and the remaining 3 pairs to be adanal setae; in addition to them 3 pairs of neotrichial setae are found, which may be called aggenital



Figs. 6–9. *Plateremaeus yaginumai* sp. n. 6: Cerotegument on the anterolateral part of notogaster. 7: Sensillus, bothridium and interlamellar seta. 8: Ventral. 9: Dorsal.

setae. Epimeral region shows also neotrichy, but not so strongly as indicated in *P. mirabilis* Csiszar, 1962, and in *P. legenderei* Balogh, 1962; epimeral setal formula must be 7–1–9–4; two pairs of epimeral setae near the posterolateral corners of mentum are distinctly longer and thicker than the remaining epimeral setae.

Material examined. Holotype (YNU-4, in spirit): Mt. Yumishi-dake, Kakeroma Island in the Amami Islands, Southwest Japan, 25–II–1972, H. Suzuki. The type is deposited in the collection of Yokohama National University.

Remarks. The new species, *P. yaginumai*, is distinguishable from the other species

of *Plateremaeus* by the presence of 3 concavities on notogaster, 5 pairs of anal setae and also characteristic numbers of epimeral and aggenital setae.

The species name was dedicated to Dr. Takeo YAGINUMA, the president of Arachnological Society of East Asia, to celebrate his 60th birthday.

II. Record of Interesting Species

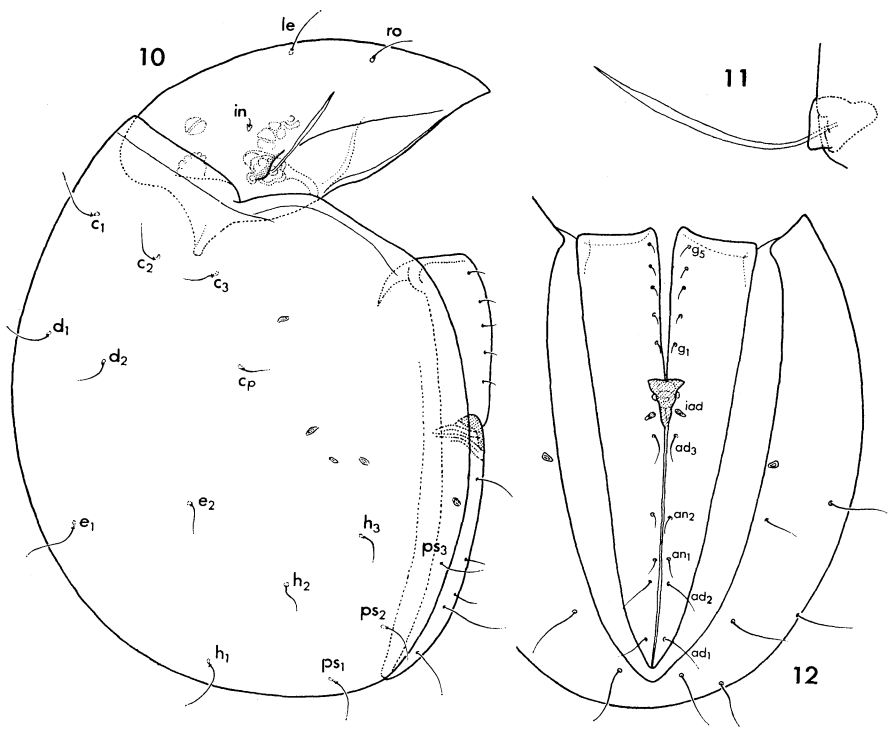
Microtritia tropica MÄRKEL

(Figs. 10–12)

Microtritia tropica MÄRKEL, 1964, p. 48, fig. 11.

Measurement. Length of notogaster: 290 μ, height of notogaster: 230 μ, width of notogaster: 210 μ, length of aspis: 185 μ, length of sensillus (exposed portion): 83 μ.

Material examined. 1 ex.: Mt. Yumishi-dake, Kakeroma Island in the Amami Islands, Southwest Japan, 25–II–1972, H. SUZUKI.



Figs. 10–12. *Microtritia tropica* MÄRKEL. 10: Lateral view of body. 11: Sensillus in dorasl view (left side). 12: Ventral view of hysterosoma.

Remarks. The specimens from Japan is well in accord with the original description and figures by MÄRKEL of *M. tropica* from Peru. According to his measurement, the species seems to be much variable in body size and the single Japanese specimen is of smaller size. HAMMER (1970) reported the species for the second time from Easter Island and the present record from Japan is the third. It is a matter of great interest that the South American species was found from a far remote place, Kakeroma Island at about 28° N.Lat. and 129° E. This fact may suggest the possibility of wide distribution of the species.

Oxyamerus spathulatus AOKI

Oxyameus spathulatus AOKI, 1965, p. 162, figs. 47–57.

Measurement. Body size: 440×227 μ.

The species was originally described from Thailand. In the Japanese specimen the notogastral setae are somewhat thicker and the body size is smaller than in the specimens from Thailand (490–515×264–291 μ). Thick covers of cerotegument are attached especially on the both sides of the anterior part of prodorsum, so that the part appears to be broader than it is.

Material examined. 1 exs.: Mt. Yumishi-dake, Kakeroma Island in the Amami Islands, Southwest Japan, 25–II–1972, H. SUZUKI.

In addition to the four species mentioned above the following 13 species are recorded with the same collecting data:

Rhysotritia ardua (C. L. KOCH, 1841)
Eohypochthonius crassisetiger AOKI, 1959
Cryptacarus hirsutus AOKI, 1961
Eremobelba japonica AOKI, 1959
Eremulus avenifer BERLESE, 1913
Zetorchestes saltator (OUDEMANS, 1915)
Tokunocepheus mizusawai AOKI, 1966
Machuella ventrisetosa HAMMER, 1961
Oppia viperea AOKI, 1959
Lasiobelba remota AOKI, 1959
Ceratozetes mediocris BERLESE, 1908
Scheloribates latipes (C. L. KOCH, 1841)
Rostrozetes foveolatus SELLNICK, 1925

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摘　　要

青木淳一（横浜国立大学環境科学研究センター）：加計呂麻島で採集されたササラダニ類の新種および分布上興味ある種.

奄美諸島の加計呂麻島で鈴木博氏によって採集されたササラダニ類の中に，いくつかの興味ある種が見い出された．その中の2種は新種で，ススキチョウチンダニ（新称）*Sphaerochthonius suzukii* sp. n.，ヤギヌマヒラセナダニ（新種）*Plateremaeus yaginumai* sp. n. と命名され，前者の属するチョウチンダニ科（新称）Sphaerochthoniidae はわが国から始めて記録されるものである．チビイレコダニ（新称）*Microtritia tropica* MÄRKEL は南米ペルーおよびイースター島に生息する種で，今回日本で発見されたことは一驚に値する．また，タイ国から記載されたクチバシダニ（新称）*Oxyamerus spathulatus* AOKI も得られた．クチバシダニ科（新称）Oxyameridae も本邦新記録である．